

Appl. No. : 09/902,441  
Filed : July 9, 2001

### REMARKS

Please cancel claims 1-12, 14-17, 19-23, and 29. Claim 13 has been amended. Support for such amendment can be found in the Specification as filed on page 6, lines 19-21. As a result, Claims 13, 18, 24-28 and 30 are pending.

#### Claim rejections under 35 U.S.C. §103

The Examiner has maintained rejection of Claims 12, 19-23 and 29 under 35 U.S.C. §103(a) as being allegedly unpatentable over Haldas *et al.* (USP 3,772,045), Yamagisi *et al.* (USP 4,190,454), Donnison *et al.* (J. Dental Res. 1963 42:587-593), or Mallon (ZKG International 1988 41:309-311). More specifically, the Examiner considers control of particle size as an obvious design choice unless applicants show criticality.

While the applicant maintains that all claims are patentable, Claims 12, 17, 19-23, and 29 have been canceled solely to expedite the allowance of the instant application. The Applicant wishes to point out that calcium tartrate is hardly soluble in water. See, for example, EN 31.5.2001 Official Journal of the European Communities L 146/3, or Merck Index on-line (Calcium tartrate  $\text{CaC}_4\text{H}_4\text{O}_6 \times 2\text{H}_2\text{O}$  solubility:  $7.70 \times 10^{-7}$  mol/l at 25°C), see the attached document. Therefore, the assumption that the prior art solutions (compositions) would contain particles having mean particle size less than about 30  $\mu\text{m}$  does not stand.

In addition, to expedite allowance of the present application, Applicant has canceled claims which were withdrawn as being directed to non-elected inventions.

The Applicant has amended Claim 13 to include "plaster" in the Markush group of powders. Support for such amendment can be found in the Specification as filed on page 6, lines 19-21. Therefore, amendments to Claim 13 does not introduce new matter.

#### Allowable Subject Matter

In the Office Action, the Examiner indicated that Claims 13, 24-28 and 30 were allowed. The Examiner did not indicate the status of Claims 17 and 18. The Applicant assumes that Claim 18 was also allowed.

Appl. No. : 09/902,441  
Filed : July 9, 2001

### CONCLUSION

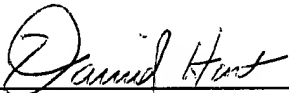
The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call the undersigned at (619) 687-8633 (direct line), to discuss such issues.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: Jan 22, 2004

By:   
Daniel Hart  
Registration No. 40,637  
Attorney of Record  
Customer No. 20,995  
(619) 235-8550

O:\DOCS\MXG\MXG-4349.DOC  
011204



## Lab Tools - Tables for laboratory use

## - SOLUTIONS - AQUEOUS SYSTEMS -

## SOLUBILITY PRODUCTS OF SLIGHTLY SOLUBLE INORGANIC COMPOUNDS

Substance	Formula	Solubility product at given temperature, in [mol/l]
Aluminium hydroxide	Al(OH) <sub>3</sub>	4.00 × 10 <sup>-13</sup> (15°) 1.50 × 10 <sup>-15</sup> (18°) 3.70 × 10 <sup>-15</sup> (25°)
Arsenic(III) sulfide	As <sub>2</sub> S <sub>3</sub>	4.00 × 10 <sup>-29</sup> (18°)
Barium carbonate	BaCO <sub>3</sub>	7.00 × 10 <sup>-9</sup> (16°) 8.10 × 10 <sup>-9</sup> (25°)
Barium chromate	BaCrO <sub>4</sub>	1.60 × 10 <sup>-10</sup> (18°) 2.40 × 10 <sup>-10</sup> (28°)
Barium fluoride	BaF <sub>2</sub>	1.60 × 10 <sup>-6</sup> (10°) 1.70 × 10 <sup>-6</sup> (18°)
Barium oxalate	BaC <sub>2</sub> O <sub>4</sub> × 2H <sub>2</sub> O	1.20 × 10 <sup>-7</sup> (18°)
Barium sulfate	BaSO <sub>4</sub>	8.70 × 10 <sup>-11</sup> (18°) 1.08 × 10 <sup>-10</sup> (25°) 1.98 × 10 <sup>-10</sup> (50°)
Beryllium hydroxide	Be(OH) <sub>2</sub>	2.70 × 10 <sup>-19</sup> (25°)
Bismuth hydroxide	Bi(OH) <sub>3</sub>	4.30 × 10 <sup>-31</sup> (18°)
Bismuth oxide chloride	BiOCl	1.60 × 10 <sup>-31</sup> (25°)
Bismuth sulfide	Bi <sub>2</sub> S <sub>3</sub>	1.60 × 10 <sup>-72</sup> (18°)
Cadmium carbonate	CdCO <sub>3</sub>	2.50 × 10 <sup>-14</sup> (25°)
Cadmium oxalate	CdC <sub>2</sub> O <sub>4</sub> × 3H <sub>2</sub> O	1.53 × 10 <sup>-8</sup> (18°)
Cadmium sulfide	CdS	3.60 × 10 <sup>-29</sup> (18°)
Calcium carbonate	CaCO <sub>3</sub>	4.80 × 10 <sup>-9</sup> (25°)
Calcium fluoride	CaF <sub>2</sub>	3.40 × 10 <sup>-11</sup> (18°) 3.95 × 10 <sup>-11</sup> (26°)
Calcium hydroxide	Ca(OH) <sub>2</sub>	5.47 × 10 <sup>-6</sup> (18°)
Calcium oxalate	CaC <sub>2</sub> O <sub>4</sub> × H <sub>2</sub> O	1.78 × 10 <sup>-9</sup> (18°) 2.57 × 10 <sup>-9</sup> (25°)
Calcium phosphate	Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>	1.00 × 10 <sup>-25</sup> (25°)
Calcium sulfate	CaSO <sub>4</sub>	6.10 × 10 <sup>-5</sup> (10°) 2.45 × 10 <sup>-5</sup> (25°)
Calcium tartrate	CaC <sub>4</sub> H <sub>4</sub> O <sub>6</sub> × 2H <sub>2</sub> O	7.70 × 10 <sup>-7</sup> (25°)
Cobalt(II) carbonate	CoCO <sub>3</sub>	1.00 × 10 <sup>-12</sup> (25°)
Cobalt(II) sulfide	CoS	1.90 × 10 <sup>-27</sup> (20°)
Copper(I) bromide	CuBr	4.15 × 10 <sup>-8</sup> (18-20°)
Copper(II) carbonate	CuCO <sub>3</sub>	1.37 × 10 <sup>-10</sup> (25°)
Copper(I) chloride	CuCl	1.02 × 10 <sup>-6</sup> (18-20°)
Copper(II) hydroxide	Cu(OH) <sub>2</sub>	5.60 × 10 <sup>-20</sup> (25°)
Copper(I) iodide	CuI	5.06 × 10 <sup>-12</sup> (18-20°)
Copper(I) sulfide	Cu <sub>2</sub> S	2.00 × 10 <sup>-47</sup> (18°)
Copper(II) sulfide	CuS	8.00 × 10 <sup>-45</sup> (18°)
Copper(I) thiocyanate	CuSCN	1.60 × 10 <sup>-11</sup> (18°)
Iron(II) carbonate	FeCO <sub>3</sub>	2.50 × 10 <sup>-11</sup> (20°)
Iron(II) hydroxide	Fe(OH) <sub>2</sub>	1.64 × 10 <sup>-14</sup> (18°)
Iron(III) hydroxide	Fe(OH) <sub>3</sub>	1.10 × 10 <sup>-36</sup> (18°)
Lanthanum hydroxide	La(OH) <sub>3</sub>	~ 10 <sup>-20</sup> (25°)
Lead bromide	PbBr <sub>2</sub>	3.90 × 10 <sup>-5</sup> (25°)
Lead carbonate	PbCO <sub>3</sub>	3.30 × 10 <sup>-14</sup> (18°)

Lead chloride	PbCl <sub>2</sub>	2.12 x 10 <sup>-5</sup> (25°)
Lead chromate	PbCrO <sub>4</sub>	1.77 x 10 <sup>-14</sup> (25°)
Lead fluoride	PbF <sub>2</sub>	2.70 x 10 <sup>-8</sup> (9°) 3.20 x 10 <sup>-8</sup> (18°)
Lead iodate	Pb(IO <sub>3</sub> ) <sub>2</sub>	5.30 x 10 <sup>-14</sup> (9.2°) 1.20 x 10 <sup>-13</sup> (18°) 2.60 x 10 <sup>-13</sup> (25.8°)
Lead iodide	PbI <sub>2</sub>	7.50 x 10 <sup>-9</sup> (15°) 1.40 x 10 <sup>-9</sup> (25°)
Lead oxalate	PbC <sub>2</sub> O <sub>4</sub>	2.74 x 10 <sup>-11</sup> (18°)
Lead sulfate	PbSO <sub>4</sub>	1.06 x 10 <sup>-8</sup> (18°)
Lead sulfide	PbS	3.40 x 10 <sup>-28</sup> (18°)
Lithiumcarbonat	Li <sub>2</sub> CO <sub>3</sub>	1.70 x 10 <sup>-3</sup> (25°)
Magnesium ammonium phosphate	MgNH <sub>4</sub> PO <sub>4</sub>	2.50 x 10 <sup>-13</sup> (25°)
Magnesium carbonate	MgCO <sub>3</sub>	2.60 x 10 <sup>-5</sup> (12°)
Magnesium fluoride	MgF	7.10 x 10 <sup>-9</sup> (18°)
Magnesium hydroxide	Mg(OH) <sub>2</sub>	1.20 x 10 <sup>-11</sup> (18°)
Manganese carbonate	MnCO <sub>3</sub>	8.80 x 10 <sup>-10</sup> (18°)
Manganese sulfide	MnS	7.00 x 10 <sup>-16</sup> (18°)
Mercury(I) bromide	Hg <sub>2</sub> Br <sub>2</sub>	1.30 x 10 <sup>-21</sup> (25°)
Mercury(I) chloride	Hg <sub>2</sub> Cl <sub>2</sub>	2.00 x 10 <sup>-18</sup> (25°)
Mercury(I) chromate	Hg <sub>2</sub> CrO <sub>4</sub>	2.00 x 10 <sup>-9</sup> (25°)
Mercury(I) cyanide	Hg <sub>2</sub> (CN) <sub>2</sub>	5.00 x 10 <sup>-40</sup> (25°)
Mercury(I) iodide	Hg <sub>2</sub> I <sub>2</sub>	1.20 x 10 <sup>-28</sup> (25°)
Mercury(II) iodide	HgI <sub>2</sub>	3.20 x 10 <sup>-29</sup> (25°)
Mercury(I) oxide	Hg <sub>2</sub> O	1.60 x 10 <sup>-23</sup> (25°)
Mercury(II) oxide	HgO	1.70 x 10 <sup>-26</sup> (25°)
Mercury(I) sulfide	Hg <sub>2</sub> S	1.00 x 10 <sup>-47</sup> (18°)
Mercury(II) sulfide	HgS	3.00 x 10 <sup>-54</sup> (18°)
Nickel(II) carbonate	NiCO <sub>3</sub>	1.35 x 10 <sup>-7</sup> (15°)
Nickel(II) hydroxide	Ni(OH) <sub>2</sub>	1.60 x 10 <sup>-14</sup> (25°)
Nickel(II) sulfide	NiS	1.00 x 10 <sup>-26</sup> (20°)
Potassium hexachloroplatinate (IV)	K <sub>2</sub> PtCl <sub>6</sub>	1.10 x 10 <sup>-5</sup> (18°)
Potassium hydrogen tartrate	KHC <sub>4</sub> H <sub>4</sub> O <sub>6</sub>	3.80 x 10 <sup>-4</sup> (18°)
Potassium perchlorate	KClO <sub>4</sub>	1.07 x 10 <sup>-2</sup> (25°)
Silver arsenate	Ag <sub>3</sub> AsO <sub>4</sub>	1.00 x 10 <sup>-19</sup> (25°)
Silver bromide	AgBr	4.10 x 10 <sup>-13</sup> (18°) 7.70 x 10 <sup>-13</sup> (25°)
Silver chloride	AgCl	0.21 x 10 <sup>-10</sup> (4.7°) 0.37 x 10 <sup>-10</sup> (9.7°) 1.56 x 10 <sup>-10</sup> (25°) 13.2 x 10 <sup>-10</sup> (50°) 215 x 10 <sup>-10</sup> (100°)
Silver chromate	Ag <sub>2</sub> CrO <sub>4</sub>	1.20 x 10 <sup>-12</sup> (14.8°) 9.00 x 10 <sup>-12</sup> (25°)
Silver iodide	AgI	0.32 x 10 <sup>-16</sup> (13°) 1.50 x 10 <sup>-16</sup> (25°)
Silver sulfide	Ag <sub>2</sub> S	1.60 x 10 <sup>-49</sup> (18°)
Silver thiocyanate	AgSCN	0.49 x 10 <sup>-12</sup> (18°) 1.16 x 10 <sup>-12</sup> (25°)
Strontium carbonate	SrCO <sub>3</sub>	1.60 x 10 <sup>-9</sup> (25°)
Strontium fluoride	SrF <sub>2</sub>	2.80 x 10 <sup>-9</sup> (18°)
Strontium oxalate	SrC <sub>2</sub> O <sub>4</sub>	5.60 x 10 <sup>-8</sup> (18°)
Strontium sulfate	SrSO <sub>4</sub>	2.80 x 10 <sup>-7</sup> (2.9°) 3.80 x 10 <sup>-7</sup> (17.4°)
Thallium(I) bromide	TlBr	3.90 x 10 <sup>-6</sup> (25°)
Thallium(I) chloride	TlCl	1.90 x 10 <sup>-4</sup> (25°)
Thallium(I) iodide	TlI	5.80 x 10 <sup>-8</sup> (25°)
Thallium(III) hydroxide	Tl(OH) <sub>3</sub>	1.40 x 10 <sup>-53</sup> (25°)
Thallium(II) sulfide	Tl <sub>2</sub> S	9.00 x 10 <sup>-23</sup> (25°)
Thallium(I) thiocyanate	TlSCN	2.30 x 10 <sup>-4</sup> (25°)

Zinc carbonate	$\text{ZnCO}_3$	$6.00 \times 10^{-11}$ (25°)
Zinc hydroxide	$\text{Zn(OH)}_2$	$1.00 \times 10^{-17}$ (25°)
Zinc sulfide, alpha	$\text{ZnS}$	$6.90 \times 10^{-26}$ (20°)
Zinc sulfide, beta	$\text{ZnS}$	$1.10 \times 10^{-24}$ (25°)

**BACK TO TOP**

The ChemDAT pages are designed for Microsoft Internet Explorer 5.x and Netscape Navigator 4.05 and higher